



# The Year of Decision

Renewing the Northwest Power Planning Council's Fish and Wildlife Program

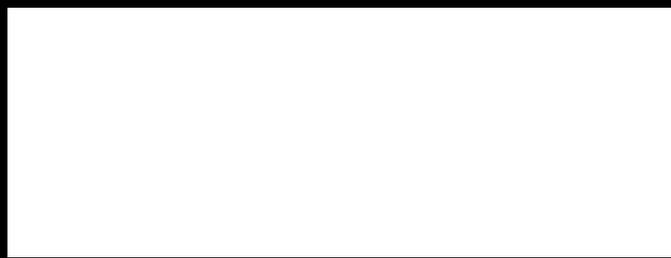
## It's Your Money

The steps the Power Planning Council is taking to bring **accountability** and balance to fish and wildlife spending



## Independent Science, Sound Decisions

Why the Council's new **analytical** system will lead to **decisions**



## The Future of the Columbia Basin

The Multi-Species Framework Project's alternatives **balance** the choices



From the Desk of  
Council Chair  
**Larry Cassidy**



Council Members



Eric Bloch, Oregon



John Brogotti, Oregon



John Etchart, Montana



Mike Field, Idaho



Stan Grace, Montana



Tom Karier, Washington



Todd Maddock, Idaho

PHOTOS:  
RICHIWASAKI

February 2000

Dear Fellow Citizen:

As we begin the 21st Century, the Northwest Power Planning Council marks an important end — and an important beginning.

We recently came to the end of an annual fish and wildlife project selection process that brought an unprecedented level of independent scientific review to our recommendations. Using this rigorous analysis in our decision making should increase the confidence of stakeholders and the public in the effectiveness of hundreds of millions of dollars of public investment.

At the same time, we are embarking on a year that will bring dramatic changes to our efforts to protect and restore fish and wildlife in the Columbia River Basin. We will refine the Multi-Species Framework Project, amend our fish and wildlife program and improve our project funding process to make our decision-making more clear, effective and accountable. Most important, the amended program will provide a resource that can help all the region's stakeholders coordinate their efforts and investments in a way that will significantly improve results.

A vital tool in changing our way of doing business will be the Multi-Species Framework Project.

The Multi-Species Framework Project is an attempt to bring the highest level of data-based analysis together with an inclusive and participatory look at the different alternatives available to the region as we make choices about how to protect and restore our fish and wildlife. What is exciting about the Framework is that its extraordinary scope and detail holds an important promise: action based on a solid scientific foundation and a clear focus on measurable results.

The Council included the entire range of Northwest constituent interests in defining the possible approaches to fish and wildlife recovery. When it's complete, the Framework will offer a comprehensive analysis of the ecological and human effects of these approaches. With this information in hand, we will be able to make on-the-ground decisions that have the best chance of protecting the values and achieving the results we share.

What follows is an overview of the Multi-Species Framework and the steps the Council will take to refine it and to amend our fish and wildlife program. Over the next year, the Northwest Power Planning Council looks forward to working with all the region's stakeholders to update and improve the region's fish and wildlife plan and to move from discussion to decisive action.

Sincerely,





PHOTO:STEPHENSASSER,NWPPCSTAFF

# Taking the Next Step for Fish and Wildlife

Left to right: Governor Gary Locke of Washington, Governor Marc Racicot of Montana, Governor John Kitzhaber of Oregon and Governor Dirk Kempthorne of Idaho. The four Northwest governors appoint members of the Northwest Power Planning Council. They are shown at a briefing on the Framework Project where they directed the Council to improve the scientific credibility, accountability and results of fish and wildlife investments.

"We simply must find a way to save our wild salmon. This is not just about fish. It's about saving the quality of life that makes the Northwest unique."

**Governor Gary Locke, Washington**

"The framework will provide us with a fresh start in finding solutions. It is a chance to get everyone on the same page so we can work toward the same goals and measure progress in the same way."

**Governor Marc Racicot, Montana**

"I am looking to the Northwest Power Planning Council to provide the meaningful and effective regional input that is essential for these issues to be resolved in ways that benefit the Northwest."

**Governor John Kitzhaber, Oregon**

"The salmon will be restored only by addressing each portion of their habitat during each phase of their life cycle. Each sector will have to make concessions, and each state will have to do its part."

**Governor Dirk Kempthorne, Idaho**

Fish and wildlife protection and recovery are not new issues in the Pacific Northwest. People used to believe that our salmon runs were a vast, inexhaustible resource. It's become clear that isn't the case.

As long ago as the late 1800s, declines in numerous stocks of fish were beginning to be noticed. Around the turn of the century, the first measures for protecting fish and wildlife were proposed. But even with all the efforts undertaken, challenges have continued to mount even faster.

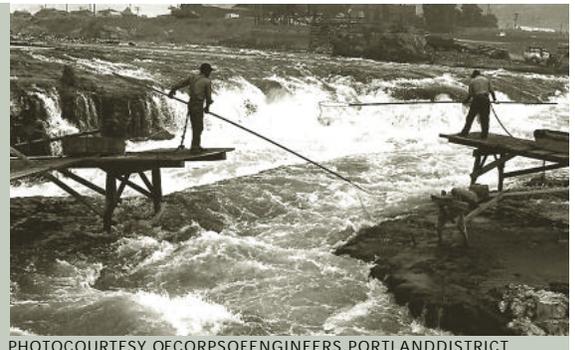
Few issues facing our region are as important, complex and emotional as protecting and restoring our fish and wildlife. Fish and wildlife are important resources in the Northwest, but also hold a far greater significance than other resources because they are intrinsic to our regional character. They are a living link with our natural heritage, and part of what makes us unique as a region and a people.

At the same time, the things that pose a threat to the survival of our fish and wildlife also make important contributions to our quality of life: urban development, recreation, logging, agriculture, shipping and the hydroelectric power that helped transform the Pacific Northwest into the vital, dynamic place it is today.

Few would argue with the need to protect and restore our fish runs and other wildlife. However, that work must be accomplished while being respectful of the effects on our communities, people and other values. That commitment has led to a tremendous amount of dedicated work and investment from every corner of the region. But beyond that, there has been precious little effective collaboration among the collection of agencies, organizations and sovereign interests.

Problems arise from these divergent efforts. In some cases, useful projects have worked at cross-purposes. An example would be one agency investing in a project to release fish upriver, while an irrigation diversion downriver created by another agency makes it impossible for these same fish to pass to the ocean. Even more typically, fragmented research and differing perspectives have created a sort of fish and wildlife recovery "paralysis." This has had a damaging effect on the confidence and support of policy makers and the public.

The Northwest Power Planning Council has a special position and a unique perspective on all of this. Created by Congress as a regional compact, the Council is the region's public voice in key fish and wildlife decisions. The Council seeks to find the balance that best serves the



PHOTOCOURTESY OF CORP SOF ENGINEERS, PORTLAND DISTRICT

► "Taking the Next Step" continued from page 3

broad public interest while keeping an eye on how public and electricity ratepayer dollars are spent.

The Council has a keen understanding of the competing interests involved in this problem. But at this juncture, the Council has come to realize that this competition can no longer be an excuse for endless process and debate.

With guidance from Congress, the Council identified several elements necessary for the region to move forward. One was to demonstrate that public and ratepayer dollars spent on fish and wildlife recovery efforts are used accountably and effectively.

As a result, 1999 saw an extraordinary use of independent scientific review to help formulate project funding decisions. In addition, the entire project review and selection process is being reformed to be more rational, coordinated and cohesive, while bringing a longer-term perspective to bear.

Another important need is to establish a comprehensive scientific and policy structure that can be used by all those involved in fish and wildlife recovery to ensure the highest possible level of scientific credibility, fiscal accountability and cooperation.

That requires creating a base of information that has heretofore been lacking: a single analysis that encompasses a full spectrum of alternative approaches to restoring fish and wildlife, while clearly outlining both the expected environmental effects and the human and community impacts. And it is vital that this analysis be "transparent" in its methodology, so that the assumptions, the science and the calculations are there for all to see.

That analysis is the Multi-Species Framework. And it promises to be a valuable tool in the coming year's effort to transform the Northwest's fish and wildlife recovery efforts. ■

## The Northwest Power Planning Council:

### A Public Voice for Balanced Policy

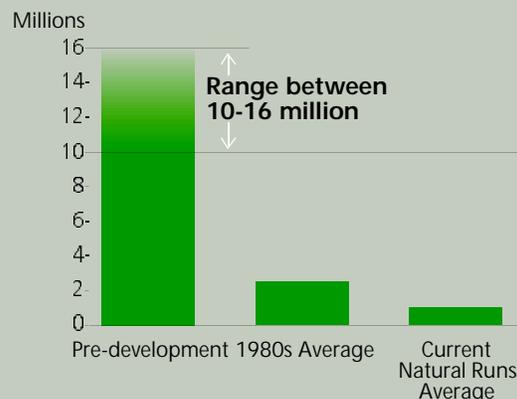
Authorized by the U.S. Congress in 1980, the Northwest Power Planning Council is an interstate compact among the states of Idaho, Montana, Oregon and Washington. The Council is charged by Congress with bringing balance to critical decisions facing the Northwest: the need to provide for the region's power needs while developing a program to "protect, mitigate and enhance" fish and wildlife populations affected by hydroelectric development in the Columbia Basin.

The Council is also required to make an extensive effort to involve the public in its decision-making process. The Council is designed to be a publicly accountable body to give Northwest citizens a stronger voice in determining the future of these common resources.

The governors of Idaho, Montana, Oregon and Washington appoint the Council's eight members. The Council solicits the participation of all stakeholders in the work it does, including state, federal and tribal agencies, local governments, environmental advocacy groups, industry, the scientific community and all other citizens in the Pacific Northwest.

In a sense, it is the Council's role to be an "honest broker" among a complex galaxy of legitimate interests — developing scientifically credible policies and recommendations that best serve the broad public interest. ■

### Salmon Runs: A Historical Perspective





# Framework

## The Multi-Species Framework Project:

### A More Balanced, Comprehensive Approach to Fish and Wildlife Recovery

The people of the Northwest want healthy fish and wildlife. At the same time, they're frustrated that recovery efforts spawn more controversy than fish. Too often, the debate focuses on one group promoting its recovery strategy while criticizing other strategies as radical, costly or ineffective. Citizens and policy-makers have a difficult time sorting through the claims and counterclaims. Progress is stalled.

Meanwhile, two panels of independent scientists recently concluded that the region's fish and wildlife recovery efforts could be greatly improved if they went beyond the Endangered Species Act's limited approach of looking at individual species in isolation. Instead, the scientists said, our work should aim to restore and protect the entire community of plants, animals, and people in the Columbia Basin of which individual species are a part.

The scientists' advice pointed to a new way to analyze the problems created by competing fish and wildlife recovery proposals — a way to decrease the rhetoric and increase the results.

### Analyzing the Effects of Change on all Species, Including Humans

From the start, the Multi-Species Framework Project was conceived and designed to be different. The Framework Project looked at the entire system: at the humans, salmon, steelhead, bull trout, bears, beavers and other species that share the Columbia Basin.

The Northwest states and tribes, along with a host of federal agencies, created the Framework Project. They shared the responsibility for managing the project. And unlike most planning processes, where a single agency manages a decision process that affects a single species, the Framework Project brought all the players together in a single, comprehensive effort.

Jointly, they created a common understanding of the ecological problems facing fish and wildlife. Together, they defined a broad range of alternatives for the future management of the Columbia River. In short, the Framework Project created a system in which everyone's proposal can be tested against the same criteria. It provides a cohesive, comprehensive context for all of the plans.

### The Multi-Species Framework Project:

Involving People to Make Progress

The following organizations were re-presented at the original Framework Project conference. Many organizations have followed the project since then, and additional groups have participated as well.

#### Environmental Groups

- 1000 Friends of Oregon
- Audubon Society
- Blue Mountain Native Forest Alliance
- Bonneville Environmental Foundation
- Center for Watershed and Community Health
- Defenders of Wildlife
- Ducks Unlimited
- For the Sake of Salmon
- Foundation for Water and Energy Education
- Friends of Columbia Gorge
- Friends of the Earth
- Idaho Rivers United
- Inland Empire Public Lands Council
- Izaak Walton League of America
- Keep Oregon Green Association
- Kettle Range Conservation Group
- Montana Environmental Information Center
- National Association of Conservation
- National Wildlife Federation
- Natural Resources Defense Council
- Northwest Coalition for Alternatives to Pesticides
- Northwest Ecosystem Alliance
- Northwest Energy Coalition
- Northwest Environmental Strategies
- Oregon Environmental Council
- Oregon Water Trust
- Pacific Rivers Council
- Save Our Wild Salmon
- Sierra Club
- The Nature Conservancy
- Wilderness Society

#### Utilities

- Avista Corporation
- Benton County Public Utility District
- Columbia River Alliance
- Franklin County PUD
- Northwest Irrigation Utilities
- Pacific Northwest Utilities Conference Committee
- Public Power Council
- Seattle City Light
- Warm Springs Power Enterprise
- West Extension Irrigation District

#### Agriculture and Livestock Organizations

- Berry Botanical Garden
- Columbia-Snake Rivers Irrigation Association
- Idaho Dairymen's Association
- Idaho Water Users Association
- Intermountain Grass Growers Association
- Oregon Cattleman's Association
- Oregon-Washington-North Idaho Hereford Association
- Oregon-Washington Pea Growers Association
- Oregon Water Coalition
- Northwest Food Processors
- Pacific NW Project
- Pasco Farmer's Market
- Washington State Farm Bureau
- Walla Walla Sweet Onion Growers Association
- Washington-North Idaho Seed Association
- Washington Association of Apple Growers
- Washington Association of Conservation

Districts  
 Washington Association of Wheat Growers  
 Washington Mint Growers Association  
 Washington-Oregon Asparagus Growers Association  
 Washington Poultry Industry Association  
 Washington State Beef Commission  
 Washington State Cattleman's Association  
 Washington State Dairy Federation  
 Washington State Dairy Herd Improvement Association  
 Washington State Jersey Cattle Club  
 Washington State Pork Producers  
 Washington State Council of Farmers Co-op  
 Washington State Farm Bureau  
 Washington State Grange  
 Washington State Horticultural Association  
 Washington State Potato Commission  
 Washington Women for Agriculture  
 Washington Wool Growers Association

**Government Agencies**

Alaska Department of Fish and Game  
 Animal and Plant Health Inspection  
 Association of O&C Counties  
 Bonneville Power Administration  
 Bureau of Indian Affairs  
 Bureau of Land Management  
 Bureau of Reclamation  
 City of Boardman, Oregon  
 City of Portland, Oregon  
 City of Umatilla, Oregon  
 Columbia Basin Fish and Wildlife Authority  
 Corps of Engineers  
 Department of Energy  
 Department of the Interior  
 Federal Highway Administration  
 Forest Service-Pacific Northwest Region  
 Idaho Department of Fish and Game  
 Idaho Department of Water Resources  
 Idaho National Engineering & Environmental Lab  
 Kittitas County Commission  
 Lake Roosevelt Forum  
 Legislative Commission on Indian Services  
 Marion County Board of Commissioners  
 Montana Department of Fish, Wildlife and Parks  
 Morrow County Commission  
 National Marine Fisheries Service  
 National Parks Service  
 National Oceanic and Atmospheric Administration  
 Natural Resources Conservation Service  
 Northwest Fisheries Science Center  
 Okanagon County Commissioners  
 Oregon Department of Fish and Wildlife  
 Oregon Department of Geology & Mineral Industries  
 Oregon Department of Land Conservation and Development  
 Oregon Department of Transportation  
 Oregon Department of Environmental Quality  
 Oregon Department of Forestry  
 Oregon Division of State Lands  
 Oregon Office of Energy  
 Oregon Soil and Water Commission  
 Oregon State Marine Board  
 Oregon State Parks and Recreation Division  
 Oregon Tourism Commission  
 Oregon Water Resources Department  
 Pacific Northwest Research Station  
 Pend Oreille County Commissioners

continues on page 7 ►

## The Framework Project — Scientific and Systematic

Here's how the process works:

### ☑ Step One **DONE**

The Council and its partners, in collaboration with the region's independent science panels, developed the Framework concept and a scientific foundation for fish and wildlife recovery actions.

### ☑ Step Two **DONE**

A broad spectrum of interests (more than 300 people attended an initial workshop) developed a set of visions and goals for the future of the Columbia Basin. Using workshops and input from two rounds of regional public meetings, seven alternatives were developed and refined from more than 30 initial proposals.

### ☑ Step Three **DONE**

Two scientific work groups analyzed the initial alternatives to see if they were feasible and complete, and if their objectives and goals could be expected to achieve their stated visions.

### ☑ Step Four **DONE**

The alternatives were revised and fleshed out with considerable detail to reflect concerns and comments from the scientific work groups.

### ☐ Step Five

The scientific work groups will describe the expected outcomes of each of the revised alternatives: how will Northwest ecosystems change in response to each? How will those changes affect people?

### ☐ Step Six

In keeping with its commitment to openness, the Framework Project will share all of its background data, information, statistics and scientific assumptions with important stakeholders

and the public to ensure accuracy, thoroughness and comprehensiveness before final analytical results are produced. If people are concerned, they will have an opportunity to make suggestions.

### ☐ Step Seven

The Framework Project will produce an initial analysis and share it with key stakeholder groups and the public through another round of regional meetings to ensure people understand the results predicted for each alternative. If stakeholders raise concerns about the analysis, it will be refined and improved.

### ☐ Step Eight

The Framework Project's final analysis of the alternatives will be compiled into a final report. The report and the analysis will be used by the Northwest Power Planning Council, federal agencies and others to guide the future of fish and wildlife recovery efforts.

## Balanced Range of Alternatives Shapes the Analysis

At the heart of the Framework Project's policy work is a series of seven science-based alternatives for the river's future. The alternatives represent a range of plans, from those that are most protective of the Northwest's ecology to those that are most protective of its economy.

To ensure that people are part of the equation, each alternative addresses not only fish and wildlife, but also the importance of fishing, agriculture, shipping, recreation and other economic activities. And finally, each alternative goes beyond the Endangered Species Act's single-species approach to include all the species that need and deserve our attention.

## Each Alternative includes: *A Vision*

The vision paints a picture of the future of the river and the life it supports. In addition to fish and wildlife goals, a vision might describe the state of industry, agriculture or commerce. The vision must be realistic, and acknowledge the trade-offs necessary for all the river's uses to co-exist.

## *Objectives*

These are the targets that define the vision and give direction on how to proceed. They are measurable outcomes; the number and type of species or the growth in the local economies, for example.

## *Strategies*

Strategies are the specific steps planned to achieve objectives. Strategies to help fish and wildlife might include: changes in the way dams are operated (or removal of dams in some cases); changes in land-use regulations; changes in fishing; and, changes in hatchery programs.

## Scientific Analysis

Two independent scientific workgroups made up of carefully selected experts from a range of environmental, biological, cultural, and economic specialties (see sidebar, Page 8) will soon complete an analysis of the alternatives from not only an ecological perspective, but also for their impacts on human culture, economics, and society as well.

## Accountable Public Process

The Framework process was designed to be collaborative, and to the greatest extent possible, open to public participation.

All of the agencies involved joined to coordinate public involvement and outreach and to communicate with people who will be affected by the decisions that will flow from the analysis. And, every workgroup meeting was open to the public.

Three rounds of public meetings were held throughout the region to inform the public and stakeholders and to solicit their input and involvement. State, tribal and federal decision-makers participated in the meetings. Another round of public meetings will be held when the project's analysis is complete.

## Framework to Guide Important Action on Fish and Wildlife

The Framework Project will continue to support important decisions on fish and wildlife recovery that will be made in coming months by the Northwest Power Planning Council (see "Next Steps," Page 21) and by federal agencies. The Framework analysis will lay a foundation so the Council and its partners in fish and wildlife recovery can work from scientifically sound, economically balanced information and choose from a broad range of possible options.

In addition, federal agencies with Endangered Species Act responsibilities can use the Framework Project's results. Federal modelers and managers co-ordinated with Framework staff to ensure the project's analysis will also be useful to federal decisions.

The Framework Project is a straightforward attempt by the Northwest Power Planning Council to bring balance, accountability, and action to decisions about the future of the Columbia River. ■

Port of Morrow  
Stevens County Commissioners  
US Geological Survey  
US Army Corps of Engineers  
US Attorney's Office  
US Bureau of Reclamation  
US Department of the Interior  
US Environmental Protection Agency  
US Fish and Wildlife Service  
USDA Forest Service  
Washington Conservation Commission  
Washington Department of Ecology  
Washington Department of Fish and Wildlife  
Washington Department of National Resources  
Washington State Association of Counties  
Washington State Department of Agriculture  
Washington State Parks and Recreation

### Industry Groups

Associated Oregon Industries  
Associated Oregon Loggers  
Columbia Basin Development League  
Douglas Timber Operators  
Idaho Dairyman's Association  
Idaho Grain Producers Association  
Idaho Rural Development Council  
Intertribal Timber Council  
Kaiser Aluminum  
Northwest Forestry Association  
Northwest Mining Association  
Olympic Peninsula Christmas Tree Association  
Pacific Northwest Waterways Association  
Warm Springs Forest Products Industry  
Washington Wine Institute

### Fishing Groups

Association of Northwest Steelheaders  
Columbia River Fisherman's Protective Union  
Oregon Trout  
Northwest Sportfishing Industry Association  
Salmon for All  
Trout Unlimited  
White Salmon Steelheaders

### Tribal Governments and Organizations

Affiliated Tribes of Northwest Indians  
Burns Paiute Tribe  
Canadian Columbia River Inter-Tribal Fish Commission  
Coeur d'Alene Tribe  
Columbia River Inter-Tribal Fish Commission  
Colville Confederated Tribes  
Confederated Tribe of Grande Ronde Indians  
Confederated Salish and Kootenai Tribes  
Confederated Tribe of Umatilla Indian Reservation  
Confederated Tribe of Warm Springs Reservation  
Confederated Tribes of Siletz Indians  
Coquille Indian Tribe  
Cow Creek Band of Umpqua Indians  
Kalispel Tribe  
Klamath Tribes  
Kootenai Tribe of Idaho  
Nez Perce Tribe  
Okanagon Nation Fisheries Commission  
Shoshone-Bannock Tribe  
Shoshone-Paiute Tribes of the Duck Valley Reservation  
Spokane Tribe of Indians  
Warm Springs Cultural and Heritage Program  
Yakama Nation

## Scientific, Economic Workgroups Assist Framework Project

### The Ecological Workgroup

#### Who?

The ecological workgroup is a carefully selected group of independent scientists and researchers from throughout the Pacific Northwest who are specialists in analyzing river ecosystems. A steering committee of tribal, federal and stakeholder representatives worked closely with the scientists.

#### How?

The scientists first described the current state of the Columbia Basin: which species live where, their number and overall health. The Framework Project used this information to develop the range of alternatives.

To analyze the alternatives, the ecological workgroup made use of the most current databases on Columbia Basin species and habitat characteristics. These data, together with EDT's powerful analytical capabilities, will project how different species and systems will perform under each alternative.

### The Human Effects Workgroup

#### Who?

The human effects workgroup is made up of individuals and representatives of groups who have an economic or cultural stake in the Columbia River and the region's fish and wildlife. They are supported by economists and social scientists who specialize in analyzing the effects of various management actions on local economies and populations.

#### How?

The work of the human effects workgroup will address elements that can be quantified, i.e., described with numbers, and those that are non-quantifiable, i.e., that must be

# Analyzing the Alternatives: Ecosystem & Diagnosis & Treatment (EDT)

At the heart of the Framework Project's analytical effort is a system called Ecosystem Diagnosis and Treatment (EDT). Unlike other analytical systems, EDT is all about ecosystems — the places where fish and wildlife live and the ways they interact with their environment.

EDT's bottom line: the condition of the ecosystem predicts the condition of fish and wildlife.

At the most basic level, EDT does three things. First, it evaluates current ecological conditions. Second, using the best available scientific knowledge, EDT examines the changes that are likely to result from different management actions. Third, EDT predicts — using the best available scientific information — how different species will respond to those changes.

Although EDT is new to large-scale regional planning, it is not a new analytical system. EDT has been used to develop fish and wildlife plans for the Grande Ronde and Deschutes rivers in Oregon; the Clark Fork River in Montana; and the Cowlitz, Yakima, and Nisqually rivers in Washington.

### From Regional to Local — EDT's Geography

Unlike other systems, EDT organizes information at four different geographic scales (see maps on pages 12 and 13). The broadest scale is the Columbia Basin as a whole. The next level of detail allows policy makers to divide the region into 10 distinct ecological provinces. This scale helps identify broad problems, priorities and possible solutions. Beyond the province scale are subbasins. The Columbia Basin is made up of nearly 60 separate subbasins. Subbasins are collections of watersheds.

And finally, to ensure that citizens can make a difference in their own watersheds, EDT also will provide analytical detail at a scale that divides the region into approximately 7,200 separate areas. From the broad to the specific, EDT's ability to aggregate and separate data and analysis will create valuable information and guidance for regional policymakers and local watershed councils alike.

## The Fundamentals of EDT

EDT is based on a series of fundamental scientific assumptions that are well documented in the latest scientific literature. These fundamentals include biological carrying capacity, fish and wildlife productivity, and their life history diversity. Examining one of EDT's scientific fundamentals — biological carrying capacity — helps illustrate how the system works.

The notion behind biological carrying capacity is that at any life stage (e.g. egg to fry for salmon), there is an upper limit on the number of animals that can be accommodated by the quantity and quality of available habitat. This upper limit is the *carrying capacity* for that life stage of that species in that habitat.

For example, as the population of salmon increases beyond a certain point, survival decreases until the population returns to the carrying capacity of the habitat. Think about stuffing people into a VW Bug. It is easy to see that there is a limit to the number of people that can be stuffed in.

With one person, the comfort level is as good as it gets in a VW Bug. As the number of people in the VW increases, the comfort level declines. Eventually a point is reached when you just can't get anyone else in the car. At that point, you've reached the VW's carrying capacity. You can only increase the carrying capacity by changing the size of the vehicle — using a VW van perhaps — or by changing the vehicle itself (taking out the seats to make more room, for example).

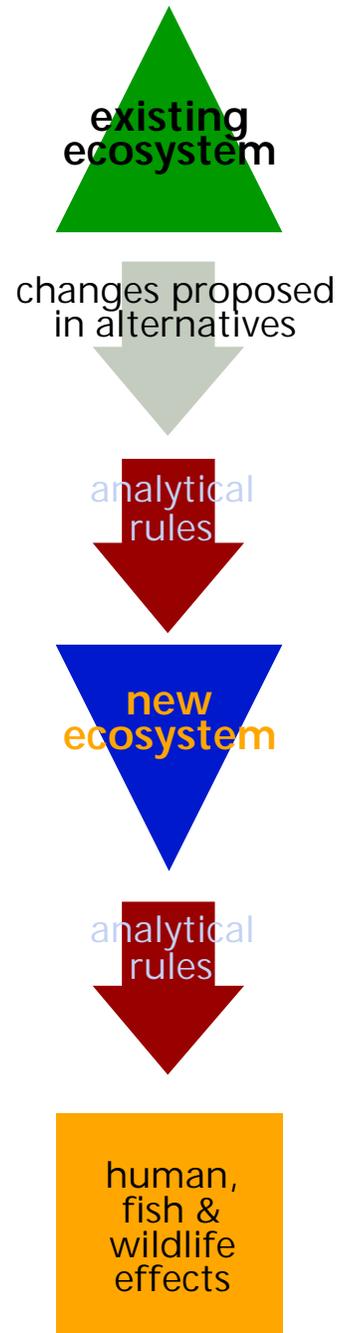
Now take the same problem and transfer it to the number of salmon that spawn and the number that survive to spawn in the next generation. All things being equal, the maximum survival of young salmon from a spawning pair of adult salmon should occur when the number of young is low. As the number increases, the young salmon get in each other's way and there is more competition for space and resources. As a result, survival declines until the capacity of the habitat is reached.

Once again, to change the carrying capacity, you can either increase the amount of habitat or improve the quality of the habitat you already have. Carrying capacity affects every stage of the salmon lifecycle. It applies in the streams where salmon are born, where they live until they migrate to the ocean, in the river during their migration, in the ocean and throughout their trip back up river to spawn (and at every stage of other species' lifecycles, too).

EDT uses data about the carrying capacity of the region's existing habitat to predict the outcomes that would result from changing that habitat (from a VW Bug to a VW Van in our example) by implementing different river

*continues on page 10* ►

## EDT at a glance



described as values or general outcomes.

Based on the actions employed in the alternatives and the biological results predicted by EDT, the Human Effects Workgroup will predict the impacts of each alternative on people using several different indicators. Some examples are:

### *Economic Opportunity*

This includes projected employment rates, per capita income, and other job-related information.

### *Social Effects*

This includes life expectancy, crime rates, nutrition, accident rates, infant mortality and other factors.

### *Tribal Effects*

The river plays an important part in the cultural identity of tribal people. The Human Effects Workgroup will consider these effects when evaluating the alternatives.

The human effects analysis will use existing studies that analyze the effects of various fish and wildlife recovery strategies on local and regional economies. Existing models and new studies were used to assess river operation alternatives. Other strategies, such as habitat improvements, are less well understood. The Human Effects Workgroup will extrapolate from existing data to complete its analysis or recommend further research where data is not available or reliable.

### *Balancing the Effects, Making Decisions*

Natural resource plans always involve compromises and trade-offs. The purpose of the Framework Project's ecological and human effects analysis is to help policy-makers assess the benefits to humans that come from improving the health of fish and wildlife and the quality of the ecosystem before making decisions. ■

management alternatives. To do this, EDT relies on very detailed information at the regional, provincial, subbasin and local level and a set of science-based "rules."

## **Science-Based "Rules" Ensure Accountability**

Here's an example of how EDT's "rules" work. Each action in every alternative is designed to create an expected change in the ecosystem. For example, one of the 108 separate strategies EDT will analyze calls for removing some roads in our forests to reduce the amount of silt in areas where salmon spawn, thus improving the capacity of the habitat and improving the ability of salmon to reproduce.

The "rule" in this case is the scientific knowledge and experience that links removing roads with reduced silt in streams. Based on scientific studies and literature and on the opinion of experts, there is a documented relationship between the amount of sediment in stream gravel and the survival of salmon eggs. The nature of that relationship is reflected in the so-called "rule."

In other words, scientists hypothesize that removing "w" miles of road in "x" type of forest reduces silt by "y" amount improving survival of salmon eggs by "z" percent. EDT uses that formula to judge the effects of alternatives that call for road removal. And, EDT can make that judgment about each of the 108 strategies as they apply to each of 7,200 distinct geographic areas that make up the Columbia Basin.

Every one of the several hundred "rules" EDT uses is documented with scientific literature and expert opinion. That documentation will be made available to the public. More importantly, EDT is coordinated with and complements federal and other regional scientific initiatives.

## **From Analysis to Action**

By combining its vast habitat data with its analysis of carrying capacity and its review of two other fundamentals — fish and wildlife productivity and life history diversity — EDT will provide the clearest picture available of how different actions change ecological conditions and thus the status of fish and wildlife.

Once policy-makers understand not only how different ecosystem changes will affect fish and wildlife, but why as well, they will be in a better position to make sound decisions about the future of the Columbia River. EDT will provide that information and help make those decisions.

An important success of the Framework Project is the collection of EDT's rules and the documentation and data that support them. In scientific terms, the rules are hypotheses that capture the best available scientific information about fish and wildlife recovery at this point in time. These hypotheses can, and will, be tested and refined. In this way, EDT will not only provide policy-makers with clear information about different alternatives and decisions, it will also become an evolving synthesis of knowledge about fish and wildlife recovery. ■



ILLUSTRATION: LARRYMILAM

# What to Expect from the Framework Project and EDT

*The Framework Project will produce a lot of data. The challenge is describing that data in a way that leads to decisions. Here's a brief description of what you can expect.*

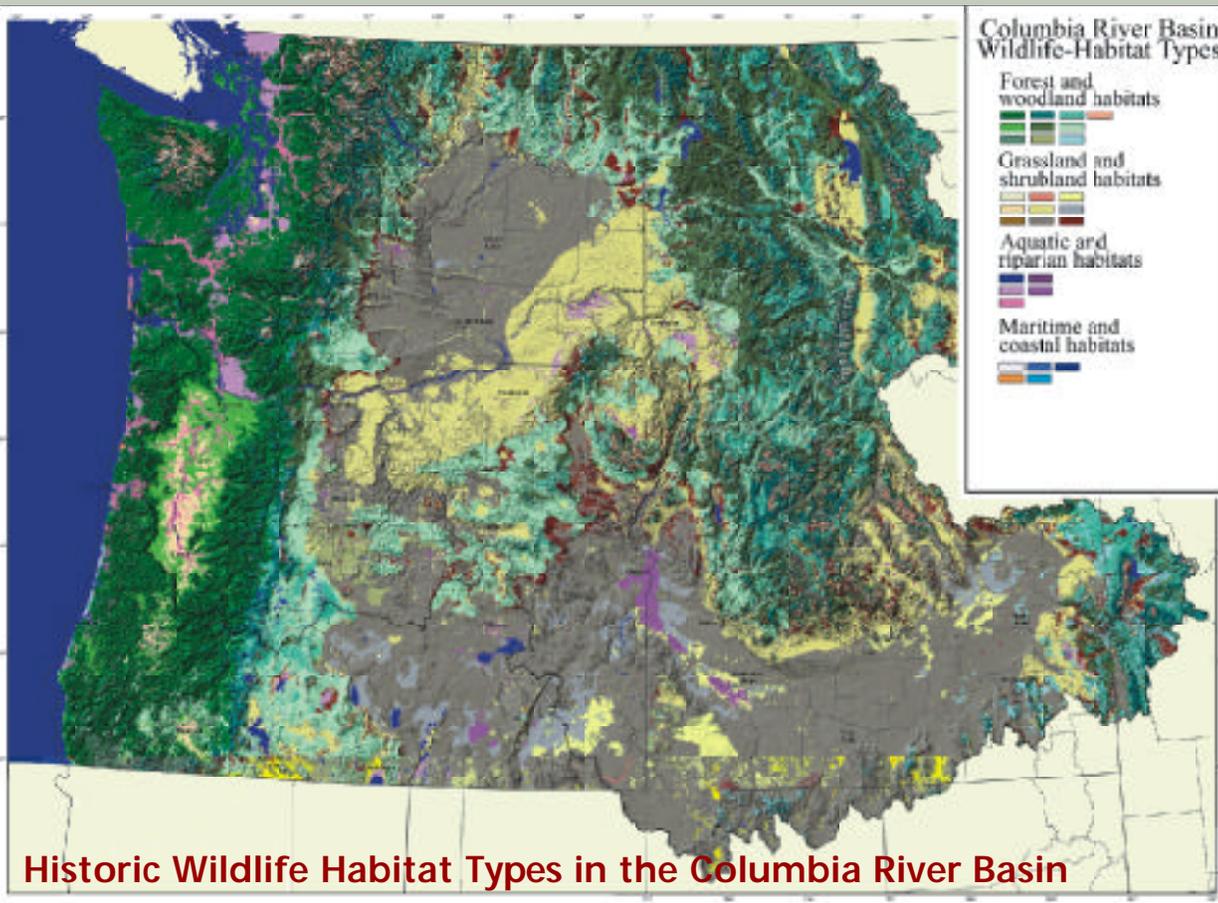
EDT takes disparate data and creates straightforward reports that display the performance of specific fish and wildlife populations under each of the proposed management alternatives (see Page 14). EDT will create reports for each of 10 ecological provinces (see map, Page 13). The reports will measure different fish and wildlife populations' ability to reproduce, the size of the populations and the populations' diversity. EDT results will be created at the subbasin and watershed level, too.

The Framework Project's Human Effects Group will use EDT's analysis to determine the likely economic costs and benefits of each alternative. Cost and benefit information will be broken out for different industries, land uses, geographic areas and by the different strategies called for in the alternatives.

For most people, maps are the most effective way to illustrate the power of the Framework Project data system and the likely affects of the different alternatives. A typical Framework Project map will show the entire Columbia River Basin with data displayed for 7,200 watersheds. Different colors or shades of gray will represent different biological conditions and economic costs and benefits. Thanks to GIS technology, it also will be possible to create similar maps that focus on any one of the Columbia Basin's ten ecological provinces or 60 subbasins.

Finally, the data reports from the Framework Project will be used to create charts and graphs comparing the different alternatives' biological and economic effects. Charts and graphs will be created to illustrate how each alternative would change current economic and biological conditions.

Turn the page to see EDT-based maps of historic and current habitat types in the Columbia Basin. These maps were among the first produced to help analyze the different alternatives



**Historic Wildlife Habitat Types in the Columbia River Basin**

**The Framework Project:  
Building a Picture of the Future**

The Multi-Species Framework Project’s analytical effort is using an analytical tool called Ecosystem Diagnosis and Treatment. Unlike other systems, EDT organizes information at four different geographic scales. The broadest scale is the Columbia Basin as a whole.

The maps above were created using EDT’s data and analytical ability regarding current and existing habitat types in the Columbia River Basin. The maps show that aquatic, riparian, grassland, shrub-land and some forest habitats have changed significantly from their historic conditions. The EDT system analyzes those changes and predicts the likely effects on fish and wildlife populations.

More importantly, by analyzing how proposed alternatives would change various habitats, EDT can make predictions about how those alternatives will affect fish and wildlife in the future.

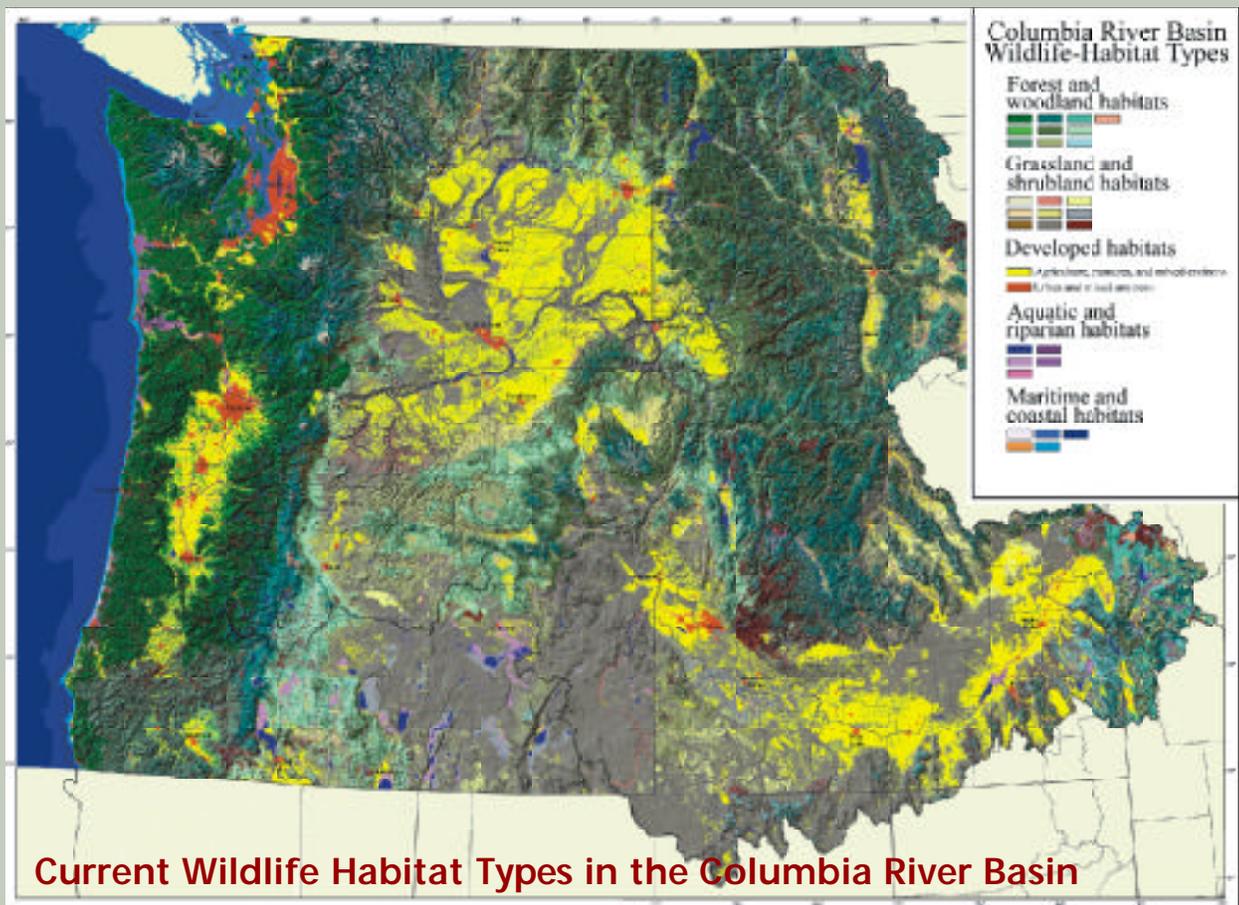
Once policy makers understand not only how different ecosystem changes will affect fish and wildlife, but why as well, they will be in a better position to make sound decisions about the future of the Columbia River. EDT will provide that information and help make those decisions.

**Provinces of the Columbia Basin**



The maps above show a basin-wide perspective. When its analysis is complete, the Framework Project will also provide pictures of how different alternatives will affect habitat, and thus fish and wildlife, at the province and subbasin level.

The province level divides the region into 10 ecological provinces. This scale helps identify broader problems, priorities and possible solutions.



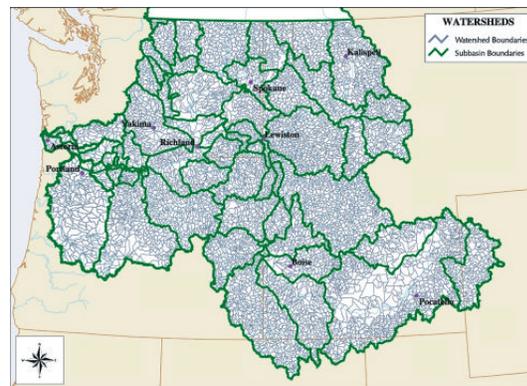
### Subbasins of the Columbia Basin



Beyond the province scale are subbasins. The Columbia Basin is made up of nearly 60 separate subbasins. Subbasins are collections of watersheds.

Finally, EDT also will provide analytical detail at a scale that divides the region into 7,200 separate watersheds. That information will help local people learn about the best ways to help fish and wildlife in

### Watersheds of the Columbia Basin



their area and make sure local efforts combine to achieve broader regional goals.

From the broad to the specific, EDT's ability to aggregate and separate data and analysis will create valuable information and guidance for regional policymakers and local watershed councils alike.



# Defining the Future

## Inclusive Range of Alternatives Reflects Regional Priorities

### How the Alternatives were Developed

In November 1998, 27 concept papers on how the Columbia River Basin should be managed were submitted to the Framework Project by a broad spectrum of regional interests. These concept papers were distilled into 108 individual fish and wildlife recovery strategies that could be applied throughout the Columbia Basin. The strategies were then distilled into seven alternatives.

The actions contemplated by the seven alternatives have been developed in considerable detail — from the basin as a whole to the very local — so scientific workgroups can analyze them completely. The alternatives represent an array of approaches, from managing the Columbia River for peak benefit for fish and wildlife to managing it for economic goals.

### Alternatives Illustrate Choices

Although interest groups and others had a big role in defining the alternatives (see sidebar on Framework Project participants), no single alternative is intended to fully represent the views of any particular group, nor was anyone asked to endorse a particular alternative.

Instead, the alternatives reflect a range of options designed to capture the breadth of the region's views. The goal is to analyze a range of actions

ecological and human impacts of specific alternatives promoted by different interest groups and governments.

### Setting Sideboards with the Past and the Present

Along with the seven alternatives are two “base cases.” One represents the current state of the Columbia River Basin. The other represents historic conditions and assumes they are as good as the basin ever was for the survival of fish and wildlife. The EDT analysis of these two “base case” alternatives provides a means to compare the alternatives to current and historic conditions.

### What's in an Alternative

All the alternatives are premised on the notion that a healthy ecosystem is characterized by its ability to support some level of fish and wildlife harvest that is greater than the level currently allowed. The alternatives differ in the way they characterize a “healthy” system, the way they would create that system and in the amount of harvest they contemplate. Beyond that, each alternative contains the following components:

#### *Vision*

With a vision, people try to paint a picture of the future of the river and the life it supports. In addition to fish and wildlife goals, a vision might

strong economy, in many cases the alternatives share similar visions. The differences among alternatives appear in the particular strategies they call for and the intensity and speed with which those strategies are implemented.

#### *Objectives*

These are the targets that define the vision and give direction on how to proceed. They are outcomes like the number and type of species or the growth in the economy, for example. Once again, the differences appear in the specific actions the alternatives call for and the intensity and speed with which those actions are taken.

#### *Strategies*

Strategies represent the specific steps planned to achieve an alternative's objectives. For example, strategies might include changes in operations at the dams, in land management approaches, and in fishing and hatchery programs. Strategies also apply to habitat. The Framework Project identifies three levels of intensity when it comes to habitat strategies. Those intensities are applied separately to private and public land depending on the alternative.

## Summary of Alternative 1:

# A connected, self-sustaining ecosystem

### Vision

Alternative 1 suggests that the only way to restore fish and wildlife is to restore the ecosystem to a much more natural state by eliminating dams, hatcheries and other artificial constraints and approaches, and by taking very aggressive actions to protect and restore habitat. Alternative 1 suggests it is not possible to provide artificial mitigation to the losses caused by development.

Instead, Alternative 1 focuses on restoring as many areas as possible through natural means. This alternative virtually eliminates human services like power generation and transportation on the Lower Snake River and would significantly reduce them on the Columbia River. This alternative puts creation of a more natural ecosystem ahead of short-term economic needs.

Under Alternative 1, effort and money now spent to maintain relatively constant conditions that benefit economic needs would be redirected toward changing the ecosystem back toward the condition it was in prior to large-scale human development. Management of fishing would change as well: Alternative 1 would put the short-term needs of native fish and wildlife ahead of fishing needs.

### Biological Objectives

This alternative seeks to help native fish, wildlife and plant communities by restoring the Columbia River Basin's natural characteristics and functions and by discouraging proliferation of non-native species. Alternative 1 would apply the most aggressive approach to habitat improvement on both public and private lands.

### Hydropower

Alternative 1 seeks to eliminate or significantly reduce fish and wildlife impacts caused by construction and operation of the hydroelectric system through dam breaching and other significant changes. This alternative supports those measures that restore or mimic natural ecosystem functions.

### Habitat

This option focuses intensively on habitat improvements in both the mainstem sections of the Columbia and Snake rivers and their tributaries. The habitat measures contemplated by Alternative 1 would require significant land use changes on both public and private lands.

### Hatcheries

Alternative 1 distinguishes itself from other alternatives because it does not support the use of fish hatcheries except for the temporary preservation of extremely endangered species. It also discourages the proliferation of non-native species and conditions favoring non-native species below and above dams that have permanently blocked salmon migration. Alternative 1 suggests that artificial approaches like hatcheries are unlikely to produce long-term improvements.

### Harvest

Alternative 1 would reduce virtually all fishing except that related to tribal ceremonial, subsistence and commercial purposes. This alternative also would require that fish be caught in their rivers of origin to emphasize benefits to local economies and to minimize impacts on weak wild stocks that sometimes mix with healthier stocks in mainstem portions of the Columbia River.

### Human Effects Objectives

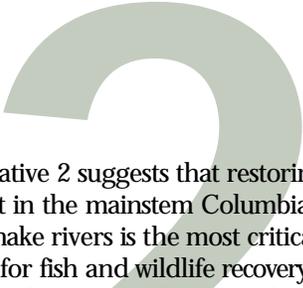
Alternative 1 puts the highest priority of all the alternatives on the aesthetic, environmental and amenity values of the river and its natural resources. Alternative 1 assumes that restoring the most natural conditions on the river are the best way to provide significant economic, social and cultural value to the Northwest over the long run.

### Strategies

- ✓ Breach the John Day, McNary, and four Lower Snake dams
- ✓ Manage the river and river uses for seasonal flows and water quality consistent with the life cycle needs of salmon, steelhead and resident fish species (those that don't migrate to the ocean)
- ✓ Reduce the amount of water stored for hydropower production to provide for more natural flows, including periodic flooding and droughts to restore native plants
- ✓ Protect, connect, and restore habitat on the tributaries throughout the basin
- ✓ Restore salmon and steelhead passage into upper portions of the basin at Chief Joseph, Grand Coulee, and Hells Canyon dams
- ✓ Increase connections among habitats in the basin, including ocean environments
- ✓ Phase out use of artificial means of salmon recovery, such as barging and hatcheries, as habitat is restored

## Summary of Alternative 2:

# A reconnected ecosystem to support salmon fishing



Alternative 2 suggests that restoring habitat in the mainstem Columbia and Snake rivers is the most critical factor for fish and wildlife recovery. Unlike Alternative 1 however, this alternative suggests it is possible to mitigate damage caused by the hydro-system. This alternative emphasizes increasing and sustaining salmon fishing while moving the system toward the condition it was in before large-scale human development. Alternative 2 treats areas above and below the dams that block salmon migration as separate systems.

### Vision

Alternative 2 seeks to restore and manage the ecosystem primarily for native fish, wildlife and plants. Alternative 2 explicitly recognizes tribal harvest obligations and is willing to accept some increased risk to native species to increase fishing opportunities. Alternative 2 takes a middle ground approach to habitat requirements on private and public lands.

### Biological Objectives

This alternative seeks to take immediate action to stop further loss of biological diversity of fish, wildlife and plants; especially those listed under the Endangered Species Act. Immediate objectives include enhancing conditions for healthy fish and wildlife populations; emphasizing restoration and enhancement of conditions compatible with native species; discouraging proliferation of non-native species except in special circumstances; and, managing human activities to meet regional and federal air and water quality standards.

### Hydropower

Alternative 2 seeks to eliminate or significantly reduce fish and wildlife

### Habitat

Alternative 2 applies moderately intensive habitat measures on both public and private lands, and instead focuses more aggressive actions on dams. It also calls for the acquisition and development of wildlife habitats as mitigation for habitat damage caused by hydropower development.

### Hatcheries

Alternative 2 would use hatcheries to help restore weak fish runs and to ensure increased fishing opportunities. For areas below dams that block salmon migration, Alternative 2 would require that hatcheries produce fish that closely match those lost, but would accept slightly more risk to native species to increase fishing opportunities. For areas above the dams that block salmon migration, Alternative 2 would allow hatcheries to produce native-type fish that could survive in the changed ecosystem.

### Harvest

Alternative 2 emphasizes the fact that fishing provides important cultural, spiritual and commercial benefits to the region. This alternative seeks to provide conditions to meet ceremonial, subsistence and commercial fisheries consistent with court interpretations of Indian treaties. The alternative would shift fishing toward spawning areas to emphasize benefits to local economies and to reduce the risk to weak stocks that mix with healthier stocks that are caught in the mainstem section of the river. Finally, Alternative 2 emphasizes sport fishing over non-Indian commercial fishing.

### Human Effects Objectives

In establishing regional priorities for economic development and environmental restoration, Alter-

alternative 2 emphasizes more fish for tribal and sport fishing.

Alternative 2 takes a moderate approach to public and private lands when it comes to protecting or restoring habitat. As the river is modified to accomplish its vision, Alternative 2 would mitigate for significant economic costs by continuing to provide existing levels of flood control, a hydropower backbone for the power system (albeit reduced from current levels); and, significant contributions to regional transportation and agricultural needs.

### Strategies

- ✓ Breach the four Lower Snake dams
- ✓ Manage the river to return seasonal flow patterns for salmon and steelhead while also protecting upriver fish that don't migrate to the ocean
- ✓ Increase habitat connections throughout the basin, including estuary and marine areas
- ✓ Make careful use of hatcheries as part of a coordinated plan that restores habitat for the fish that are released. Alternative 2 would develop new hatchery production in the John Day pool to mitigate for lost mainstem salmon habitat
- ✓ Eliminate fish barging
- ✓ Above the dams that block salmon and steelhead migration, tailor programs to provide resident fish and wildlife required by local conditions and management needs

## Summary of Alternative 3:

# A Snake River that is ecologically connected to the Columbia River

This alternative breaches the lower Snake River dams and relies on increased use of fish hatcheries. The focus of this alternative is to increase the number of Snake River fall chinook salmon using dam breaching and hatcheries so more of the healthy Hanford Reach salmon runs can be caught without endangering the Snake River fish that migrate with them.

### Vision

This alternative envisions an ecosystem that increases currently productive fish and wildlife populations and recovers depleted populations to the point of self-sustainability with a very low probability of extinction in the foreseeable future.

The ecosystem would be restored and managed primarily for native fish, wildlife and plants. However, Alternative 3 would put a greater emphasis on the use of fish hatcheries to address tribal harvest obligations and to increase recreational and commercial harvest.

### Biological Objectives

Alternative 3 seeks to increase the overall productivity and resilience of the Columbia River ecosystem by taking immediate action to stop further loss of biological diversity of fish, wildlife and plants, especially those listed under the federal Endangered Species Act. Alternative 3 also would attempt to enhance conditions for currently productive fish and wildlife populations, emphasizing native species while discouraging proliferation of non-native species except in special circumstances.

than Alternatives 1 and 2. Fish migration improvements at the dams are contemplated.

### Habitat

Alternative 3 would place the highest priority for habitat improvements on public lands. Alternative 3 would reduce the habitat burden on private lands compared with Alternatives 1 and 2. Alternative 3 also would seek to acquire and develop wildlife habitat to mitigate for habitat lost to hydropower development.

### Hatcheries

Alternative 3 would allow use of hatcheries in areas below dams that block salmon migration, but would require that the fish released closely match those lost. For areas above dams that block salmon migration, Alternative 3 would attempt to restore and enhance conditions to increase and maintain native resident fish species wherever possible. This option would allow mitigation with non-native species only in situations where those species would have limited interaction with native species.

### Harvest

Alternative 3 seeks to provide productive regional and local fisheries, in particular, ceremonial, subsistence and commercial fishing consistent with court interpretations of Indian treaties. Alternative 3 would shift fishing toward spawning areas to emphasize benefits to local economies and to reduce the risk to weak stocks that mix with healthier stocks that are harvested in the mainstem portion of the river. Finally, Alternative 3 would emphasize sport fishing over non-

### Human Effects Objectives

Alternative 3 puts a high priority on the ecological and amenity values of the river and its natural resources. Alternative 3 would attempt to mitigate for significant transitional economic impacts by providing existing levels of flood control; the hydropower backbone for an adequate, economical, efficient and reliable power supply, and regional transportation and agricultural needs. This alternative's biological focus on the Snake River would concentrate its human effects in that region as well.

### Strategies

- ✓ Restore mainstem habitat in the Snake River by breaching the four lower Snake dams
- ✓ Manage the river to return some seasonal flow pattern for salmon and steelhead while also protecting upriver populations that don't migrate to the ocean
- ✓ Protect, connect, and restore key habitats
- ✓ Make careful use of some artificial methods (such as hatcheries)
- ✓ Eliminate fish barging

ILLUSTRATION: LARRY MILAM



# Experiment to reduce scientific uncertainty

## Summary of Alternative 4:

In Alternative 4, current programs would continue but would be managed more like carefully designed experiments to test uncertainties critical to the decision to move forward with the actions contemplated in Alternatives 2, 3 or 5. Findings would be evaluated before major changes were made to dams.

### Vision

This alternative continues existing programs while reducing scientific uncertainty. Alternative 4 seeks the middle ground between short-term economic return and longer-term environmental quality.

### Biological Objectives

Because of its emphasis on experimentation, Alternative 4 is described in terms of uncertainties that are suggested by differences in Alternatives 2, 3 and 5. In addition to the experimental design, Alternative 4 includes tributary habitat measures that are moderately intensive on both public and private land.

### Hydropower

Alternative 4 would test drawdown, leaving more water in the river, passing fish over dams, and other techniques before making significant changes to the hydrosystem.

### Habitat

Alternative 4 is less aggressive than earlier alternatives on both public and private land. Alternative 4 also seeks to acquire and develop terrestrial habitats to mitigate for wildlife lost to hydropower development.

### Hatcheries

For areas below dams that block salmon and steelhead migration, Alternative 4 would use hatcheries to help specific species. Hatcheries

dams that block salmon passage, Alternative 4 would restore and enhance conditions to increase and maintain native resident fish species wherever possible.

### Harvest

Alternative 4 seeks to create an ecosystem that can provide productive regional and local fisheries, in particular, conditions to meet ceremonial, subsistence and commercial fisheries consistent with court interpretations of Indian treaties. Alternative 4 would shift fisheries toward spawning areas to emphasize benefits to local economies and to reduce the risk to weak stocks that mix with healthier stocks that are harvested in mainstem sections of the river. Alternative 4 emphasizes sport fishing over non-tribal commercial fishing.

### Human Effects Objectives

Alternative 4 would attempt to mitigate for significant economic impacts by providing existing levels of flood control, the hydropower backbone for an adequate, economical, efficient and reliable power supply, and regional transportation and agricultural needs. Finally, Alternative 4 seeks to ensure that significant costs would be justified by effective fish and wildlife recovery before they are incurred. This justification would be made through research and experimentation.

### Strategies

- ✓ The use of drawdown to test restoration effects on mainstem habitat
- ✓ The use of hatcheries to make up for lost habitat
- ✓ Reductions in ocean harvest to increase numbers of returning adult salmon
- ✓ Tests of the effectiveness of

- ✓ Above the dams that block salmon migration, tailor programs to provide resident fish and wildlife required by local conditions and management needs

To evaluate uncertainties, some potential experiments are:

- ✓ Limited drawdown of the reservoir behind McNary Dam
- ✓ More water from the Snake River Basin and possibly Canada would be left in the river for fish
- ✓ Elimination of certain fisheries, such as that in Southeast Alaska
- ✓ Implementation of innovative habitat programs

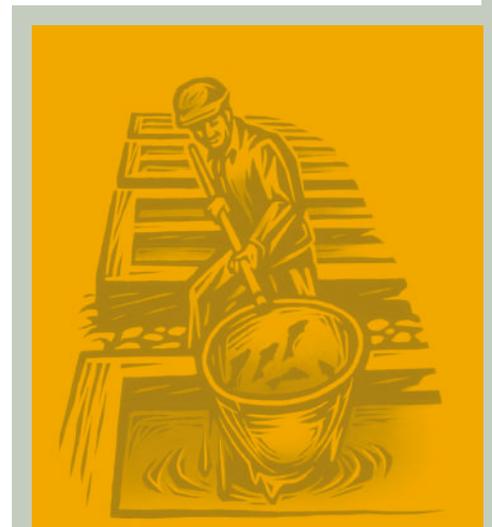


ILLUSTRATION: LARRY MILAM

## Summary of Alternative 5:

# Rebuild fish and wildlife by doing everything but breaching dams

Alternative 5 suggests that you can mitigate for the changes caused by dams through the use of aggressive habitat restoration, fish hatcheries and other measures short of breaching dams. This alternative aims to build healthy, harvestable salmon populations and to stabilize weak stocks while preserving current human benefits of the multipurpose dams. Alternative 5 would rely on improved technology and tributary habitat improvements to achieve its vision without dam breaching.

### Vision

This alternative sees a Columbia River that provides a substantial contribution to the regional economy while attempting to ensure that natural amenities are retained and that legal obligations to the tribes and the environment are met. This alternative puts a slightly greater emphasis on short-term economic return than the previous alternatives. Alternative 5 envisions the most aggressive habitat improvements on both public and private land. It also envisions significant effort to improve fish survival at dams through the use of improved water management and new technology.

### Biological Objectives

Increase the overall productivity and resilience of the Columbia River ecosystem by stopping the loss of biological diversity of fish, wildlife and plants, especially those listed under the Endangered Species Act. Alternative 5 also would attempt to enhance conditions for currently productive fish and wildlife populations, emphasize restoration and enhancement of conditions compatible with native species, and discourage proliferation of non-native species except in special circumstances.

but would not breach any dams. It would use flow augmentation, surface fish bypass, changed operations, extended length fish screens, and other measures short of dam breaching to improve fish migration.

### Habitat

Alternative 5 would place high priority and significant intensity on habitat improvement on both public and private land. It would match the most aggressive habitat actions (with the exception of dam breaching to create mainstem habitat) called for by the previous alternatives. Finally, Alternative 5 seeks to acquire and develop wildlife habitats to mitigate for losses caused by hydropower development.

### Hatcheries

Alternative 5 calls for the extensive use of hatcheries to make up for lost habitat.

### Harvest

Alternative 5 seeks to provide productive regional and local fisheries, in particular, conditions to meet ceremonial, subsistence and commercial fisheries consistent with court interpretations of Indian treaties. Alternative 5 would shift fisheries toward spawning areas to emphasize benefits to local economies and to promote known stock fisheries and would emphasize sport harvest over non-Indian commercial harvest.

### Human Effects Objectives

Because it does not call for breaching any dams, Alternative 5 would provide existing levels of flood control,

Alternative 5 seeks to select actions to restore and enhance the environment with the greatest likelihood of achieving the ecological objectives at the least cost.

### Strategies

- ✓ Continue current flow programs, with some protection for upstream reservoirs. Secure use of water from Canadian storage reservoirs to meet flow needs
- ✓ Capital improvements at the mainstem dams designed to approximate natural conditions (e.g., surface bypass)
- ✓ Manage flows in the Hanford Reach to match natural seasonal and daily patterns
- ✓ Set aside the Hanford Reach as an ecological preserve
- ✓ Make use of fish transportation as appropriate
- ✓ Increase habitat connections throughout the basin
- ✓ Use significantly more hatcheries to replace lost spawning areas
- ✓ Above the dams that block salmon and steelhead migration, tailor programs to provide resident fish and wildlife required by local conditions and management needs

# Rebuild species, enhance current river uses

Alternative 6 would allow for adjustments in river operations for fish to increase investment in habitat and other measures. Like Alternative 5, this alternative aims to build healthy, harvestable salmon populations and stabilize weak stocks at reduced costs. A key difference between this alternative and others is that it contemplates the use of non-native species as mitigation for changes caused by development.

## Vision

This alternative sees a Columbia River where strong salmon and steelhead runs increase in number and inhabit more of the river system. It would allow for recurring levels of harvest, sustained resident fish species and rebuilt weakened or marginal stocks of subspecies where there is a sufficient likelihood of recovery at socially acceptable costs. The Columbia River Basin would continue to support full spectrums of river-related economic activities and accommodate anticipated regional growth. All existing mainstem hydroelectric projects would remain in place. The river system's stewards would both maintain and improve multipurpose federal projects, and also promote and ensure the completion of a variety of programs throughout the basin to improve the ecosystem generally or individual watersheds specifically.

## Biological Objectives

Alternative 6 seeks to increase the overall productivity and resilience of selected fish and wildlife species, especially those listed under the Endangered Species Act and others that can contribute to regional fisheries. Alternative 6 would take immediate action to stop further loss of biological diversity of fish, wildlife and plants, especially those listed under the Endangered Species Act.

## Hydropower

Alternative 6 seeks to reduce the current hydropower cost impacts caused by fish and wildlife recovery measures by decreasing the amount of water dedicated to fish in the spring and increasing the amount of water available for fish in the summer. These changes would produce hydropower cost savings that would be used to make investments in other measures to restore fish and wildlife. Alternative 6 would attempt to reduce fish and wildlife impacts associated with the hydrosystem using improved technology like surface fish bypass, extended-length fish screens, maximized fish barging and other measures that do not reduce the hydropower output of the system.

## Habitat

Alternative 6 would use moderate habitat approaches on private land and moderate to intense approaches on public land. This alternative would seek to increase hydropower revenues and would use the increases to invest in habitat improvements.

## Hatcheries

Alternative 6 seeks extensive use of fish hatcheries to meet fishing needs. This alternative seeks to create an ecosystem that can provide productive regional and local fisheries. Alternative 6 would permit use of artificially supplemented stocks to meet tribal harvest objectives and would use artificial production techniques to meet non-Indian harvest objectives.

## Harvest

Alternative 6 seeks to provide conditions to meet ceremonial, subsistence and commercial fisheries

harvested in the river's main-stem sections. Finally, Alternative 6 emphasizes sport harvest over non-Indian commercial harvest.

## Human Effects Objectives

Alternative 6 seeks to provide traditional economic benefits while reducing impacts on the environment and fish and wildlife. It would mitigate for the loss of native species without jeopardizing existing economic activities. It would provide traditional flood control and commercial supplies of salmon through the most efficient economic means. Alternative 6 prioritizes tribal and then recreational fisheries over traditional commercial fisheries. It would seek to protect the regional power system's ability to financially support fish and wildlife recovery efforts by maintaining or improving electricity generation as a high priority river use.

## Strategies

*(similar to Alternative 5, with the following differences)*

- ✓ Change the flow augmentation program to produce additional funds for fish and wildlife measures
- ✓ Use supplemented stocks in the river to meet tribal harvest objectives
- ✓ Meet non-Indian harvest objectives through artificial production
- ✓ Improve and maximize fish barging

## Summary of Alternative 7:

# Rebuild species through managed approaches

This alternative envisions a river system that is managed to provide maximum economic benefits, including increased power production, increased irrigation, and increased fishing under scientific management.

### Vision

Alternative 7 would increase the multiple benefits of dams and the river through application of quantifiable data. It would increase hydro-power production; improve harvest, habitat and hatchery management; maintain existing irrigation and allow more consumptive water use; maintain navigation to river ports; and use experiments to gather useful data.

### Biological Objectives

This alternative seeks to quantify the benefits and costs of proposed strategies and implement them solely on the basis of cost-effectiveness. This alternative calls for improved measurements of survival to identify high mortality areas and the use of computer models to organize data and depict relationships to enable survival predictions. This alternative would focus on “hot spots” of mortality, abandon spring flow augmentation and real-time flow management, and experiment with late summer/fall flow augmentation in low water years. Finally, Alternative 7 would introduce predators to control terns and allow limited marine mammal hunting.

### Hydropower

Alternative 7 would enhance the ability of the hydrosystem to produce economic benefits. It would limit hydropower funding of fish and wildlife recovery to offset the effects of hydropower construction and operation. Finally, this alternative would limit fish and wildlife impacts

### Habitat

This alternative would sort habitat into “nature preserve” and production categories, decentralize habitat decisions and focus regional habitat decisions on inter-jurisdictional issues. This alternative would leave habitat issues to local decision-makers, eliminate wildlife mitigation, and use the BPA Environmental Foundation to fund habitat improvements.

### Hatcheries

Alternative 7 seeks to unify hatchery reporting and measure hatchery success by returns to watersheds. It calls for the marking of all hatchery fish. This alternative would provide funds for genetic research to increase fish size, improve disease resistance, and aid adaptation to warm temperatures. This alternative would share fishing tag revenues with hatcheries that return fish to watersheds, move hatchery management to tribes, and declare some tributaries off limits to hatchery production and others as production and supplementation watersheds.

### Harvest

This alternative seeks to manage harvest to protect weak stocks by stopping all harvest of wild fish, adopting tributary-specific escape-ment goals; eliminating ocean harvest; redirecting lower river mixed stock harvest to terminal areas; redirecting tribal mixed stock harvest to ladder and tributary fishing; buying selective gear for harvesters; and by improving harvest enforcement.

### Human Effects Objectives

Alternative 7 seeks the maximum use of natural economic incentives to implement only cost-effective strategies. This alternative puts human economic needs above changes designed to enhance the

- ✓ Abandon all spring flow augmentation and real-time management of flow for fish. Focus flow programs solely on temperature control
- ✓ Focus mainstem research efforts on measurement of survival through alternate passage methods at dams to reduce “hot spots” for mortality
- ✓ Engineer spawning channels to expand natural spawning areas
- ✓ Abandon efforts to protect existing wild stocks in tributaries where there is already significant hatchery influence
- ✓ Declare specific tributaries “off-limits” to hatcheries to provide buffer zones against genetic problems with hatchery production
- ✓ Move hatcheries to tribal management in settlement of treaty obligations
- ✓ Ban harvest of wild stocks in the mainstem
- ✓ Work toward elimination of ocean salmon harvest
- ✓ Redirect tribal mixed-stock commercial harvest to selective harvest at fish ladders and in tributaries
- ✓ Take direct action to control the bird population on Rice Island, marine mammals, and Northern pikeminnow that prey on salmon
- ✓ End federal, regional, and state regulation of habitat restoration

## Renewing the Region's Fish and Wildlife Program

### Key Principles from the Northwest Power Act

#### *Comprehensive approach*

In developing its program, the Council must deal with the Columbia River and its tributaries comprehensively. The system touches a broad range of species and human activities. The Multi-Species Framework Project's economic and biological analysis will help ensure the new program properly accounts for the impacts on both.

#### *Regional power supply.*

While the fish and wildlife program must "protect, mitigate and enhance fish and wildlife," it must do so in a way that ensures the region "an adequate, efficient, economical and reliable power supply."

#### *Federal responsibilities*

The Northwest Power Act gives the Bonneville Power Administration the authority to use its legal and financial resources "to protect, mitigate, and enhance fish and wildlife" in a manner consistent with the Council's program. The Act also requires Bonneville and other federal agencies to take the Council's program into account at each stage of their decision-making.

#### *Public involvement*

The Council is required to consult with a variety of groups in the Northwest and to maintain comprehensive programs for public participation.

#### *Fishery management*

The region's fish and wildlife agencies and Indian tribes play a special role in the program. The program must complement their existing and future activities and be consistent with the legal rights of the Columbia Basin's tribal governments.

#### *Best available science*

In considering fish and wildlife recommendations, the Act requires the Council to rely on the best available scientific knowledge. The Framework Project's scientific analysis, combined with research from federal and other agencies, will provide that knowledge.

#### *Lowest cost alternatives*

Where equally effective means of achieving the same result exist, the Council must choose the alternative with the lower economic cost.

#### *River flows*

The Act directs the Council to adopt measures to "provide flows of sufficient quality and quantity between [dams on the Snake and Columbia rivers] to improve production, migration and survival of such fish as necessary to meet sound biological objectives."

## From Analysis to Action

### Renewing the Northwest Power Planning Council's Fish and Wildlife Program

Articulate a vision. Define the goals. Break those goals into specific objectives. And then, craft the strategies that will achieve them.

These are the four building blocks of the Multi-Species Framework Project. The Northwest Power Planning Council is about to use this same successful approach to renew the Columbia River Basin Fish and Wildlife Program.

The Northwest Power Act requires the Council to develop "a program to protect, mitigate and enhance" fish and wildlife populations harmed by the construction and operation of the federal dams on the Columbia River and its tributaries. The law also says that the Council must periodically review its program.

#### *Building on the Framework Project*

The Framework Project will soon complete its preliminary analysis of the alternatives. The Council will use that analysis and other tools to create a renewed fish and wildlife program that will help all the region's agencies and stakeholders coordinate their efforts and investments in a way that will achieve a common goal: significantly improved results.

#### *A New Way of Doing Business*

The Council's amendment of the fish and wildlife program will mark a significant change in approach. Before the Framework Project, individual agencies, tribal governments and others independently submitted their priority projects and ideas to the Council. In turn, the Council compiled these individual responses into an overall fish and wildlife program.

Past programs have produced important results. But it is also clear that change is needed. Independent scientific reviews, along with things the Council and others have learned through research and on-the-ground experience, suggest the region's recovery efforts would be more effective if they were based on a comprehensive framework that includes an explicit vision, goals, objectives and strategies. The Council program amendment process will help the region establish these things and more.

The first step will be to share the Framework Project's analysis of alternatives with everyone interested in fish and wildlife, in particular, the region's tribes, fish and wildlife agencies and stakeholders. The Council will use public meetings, workshops and other tools to ensure that the right people get the right information.

## Renewing the Northwest Power Planning Council's Fish and Wildlife Program

Articulate a vision. Define the goals. Break those goals into specific objectives. And then, craft the strategies that will achieve them.

These are the four building blocks of the Multi-Species Framework Project. The Northwest Power Planning Council is about to use this same successful approach to renew the Columbia River Basin Fish and Wildlife Program.

The Northwest Power Act requires the Council to develop “a program to protect, mitigate and enhance” fish and wildlife populations harmed by the construction and operation of the federal dams on the Columbia River and its tributaries. The law also says that the Council must periodically review its program.

### *Building on the Framework Project*

The Framework Project will soon complete its preliminary analysis of the alternatives. The Council will use that analysis and other tools to create a renewed fish and wildlife program that will help all the region's agencies and stakeholders coordinate their efforts and investments in a way that will achieve a common goal: significantly improved results.

### *A New Way of Doing Business*

The Council's amendment of the fish and wildlife program will mark a significant change in approach. Before the Framework Project, individual agencies, tribal governments and others independently submitted their priority projects and ideas to the Council. In turn, the Council compiled these individual responses into an overall fish and wildlife program.

Past programs have produced important results. But it is also clear that change is needed. Independent scientific reviews, along with things the Council and others have learned through research and on-the-ground experience, suggest the region's recovery efforts would be more effective if they were based on a comprehensive framework that includes an explicit vision, goals, objectives and strategies. The Council program amendment process will help the region establish these things and more.

The first step will be to share the Framework Project's analysis of alternatives with everyone interested in fish and wildlife, in particular, the region's tribes, fish and wildlife agencies and stakeholders. The Council will use public meetings, workshops and other tools to ensure that the right people get the right information.

### *Seeking the region's recommendations*

In developing and amending the fish and wildlife program, the Council considers recommendations from outside parties, along with proposals the Council initiates on its own.

In the past, the Council provided little guidance on the structure and type of recommendations it was seeking. This year, the Council is asking people to submit specific recommendations about the appropriate vision, goals,

## Local Planning, Regional goals.

The Council understands that when it comes to the many tasks of fish and wildlife recovery, one size doesn't fit all. Different stakeholders have different ideas about the best ways to approach fish and wildlife problems.

The Council also understands that the best tool for building an effective regional approach isn't always a hammer. As the only truly regional fish and wildlife agency, the Council is in a unique position to enact changes that fairly balance the region's legitimate needs and help improve coordination among different agencies and interests. While amending its program, the Council is determined to meet its own obligations and help others meet theirs as well.

The new Council program will help guide and coordinate state and local efforts to ensure they are linked to broader regional goals. It also will define procedures, criteria and priorities to help improve the way individual projects are selected and reviewed by independent scientists.

Through its program amendment process, the Council will develop subbasin planning guidelines and outline principles about who should participate in the planning process.

By creating a clear regional vision and helping local communities work together to obtain that vision, the Council will help the region make on-the-ground decisions that have the best chance of protecting the values everyone shares and getting the results everyone desires.

# Timeline to Decisions

*The proposed schedule for renewing the Northwest Power Planning Council's Fish and Wildlife Program*

## January/February 2000

Council calls for recommendations on ways to update and improve the region's fish and wildlife program.

Preliminary results of the Multi-Species Framework analysis reviewed by experts and stakeholders.

Council members meet with tribal leaders, stakeholders and the public to discuss the Council's new direction and the schedule for updating the program.

## February/March

Multi-Species Framework analysis released.

Council staff releases a draft version (Strawman) of what a revised fish and wildlife plan might look like to foster regional discussion and debate.

Council hosts series of technical discussions with region's fish and wildlife managers and stakeholders on various fish and wildlife issues related to amending its program.

Council hosts meetings with stakeholders and opinion leaders about renewing the fish and wildlife program.

## March

Technical meetings and outreach continue.

## For More Information...

Contact the Northwest Power Planning Council

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Write: Northwest Power Planning Council  
851 SW Sixth Avenue, Suite 1100  
Portland, Oregon, 97204-1348

Web: [www.nwppc.org](http://www.nwppc.org)

## April/May

Deadline for submitting recommendations for a new fish and wildlife plan.

Recommendations received are sent out for public review.

Council holds discussions with tribal governments and stakeholder groups.

## June

Council issues draft of updated and improved plan.

## June/July

Council holds additional discussions with tribal governments and stakeholders and hosts public hearings on the draft plan.

## July/August

Council deliberates on public comments.

## August/September

Council approves a new fish and wildlife plan.



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